

Energy Efficiency Management Platform (E2MP), Phase I

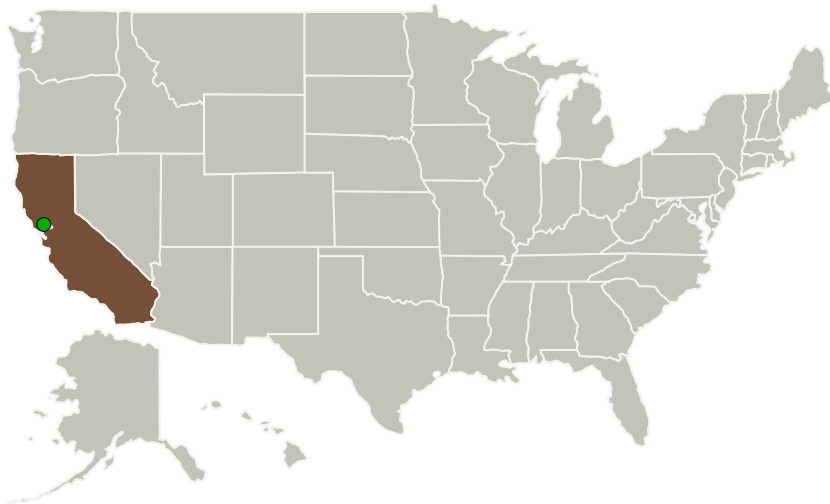
Completed Technology Project (2013 - 2013)



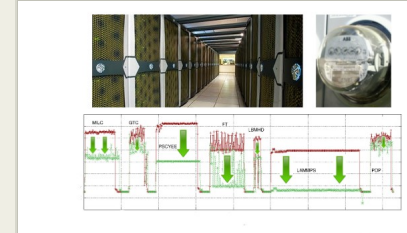
Project Introduction

The Energy Efficiency Management Platform (E2MP) is a power-aware, "Green" computing technology for managing energy consumption on High End Computing (HEC) systems while still achieving performance targets. The E2MP dynamically controls processor clock frequencies and voltages in a way as to minimize the energy required to complete the application run. The platform functions by running predictive analytics on application trace data and developing a customized frequency & voltage management scheme based on characteristics of the application and input set. The Phase I objective is to construct a technology demonstration of the platform using a computer server and workload (application) profile representative of NASA's HEC environment. The demonstration, based on an application of interest to NASA (OVERFLOW) will prove the feasibility of handling arbitrary input data sets and conducting statistical power modeling, laying the groundwork for further commercialization activities in Phase II.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
PMaC Laboratories, Inc.	Lead Organization	Industry	San Diego, California
● Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California



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Primary U.S. Work Locations

California

Project Transitions



May 2013: Project Start

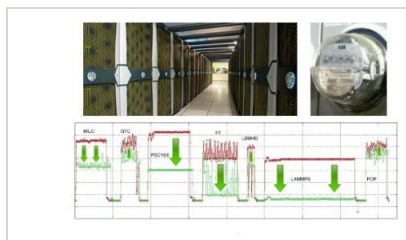


November 2013: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138131>)

Images



Project Image

Energy Efficiency Management Platform (E2MP)

(<https://techport.nasa.gov/image/137216>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

PMaC Laboratories, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

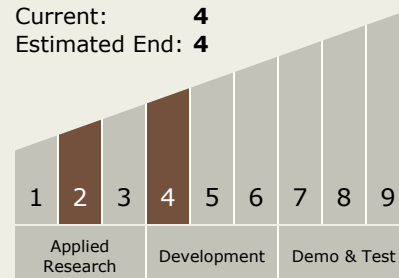
Joshua Peraza

Technology Maturity (TRL)

Start: 2

Current: 4

Estimated End: 4



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Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
 - └ TX03.3 Power Management and Distribution
 - └ TX03.3.1 Management and Control

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System